

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
4 March 2004 (04.03.2004)

PCT

(10) International Publication Number  
WO 2004/018824 A3

(51) International Patent Classification<sup>7</sup>: E21B 23/00, F16L 25/00

(21) International Application Number: PCT/US2003/025677

(22) International Filing Date: 18 August 2003 (18.08.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/405,610 23 August 2002 (23.08.2002) US

(71) Applicant (for all designated States except US): ENVENTURE GLOBAL TECHNOLOGY [US/US]; 16200 A Park Row, Houston, TX 77084 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): SHUSTER, Mark [US/US]; 19115 Prospect Ridge Lane, Houston, TX 77094 (US). RING, Lev [RU/US]; 14126 Heatherhill Place, Houston, TX 77077 (US).

(74) Agents: MATTINGLY, Todd et al.; Haynes and Boone, LLP, 901 Main Street, Suite 3100, Dallas, TX 75202 (US).

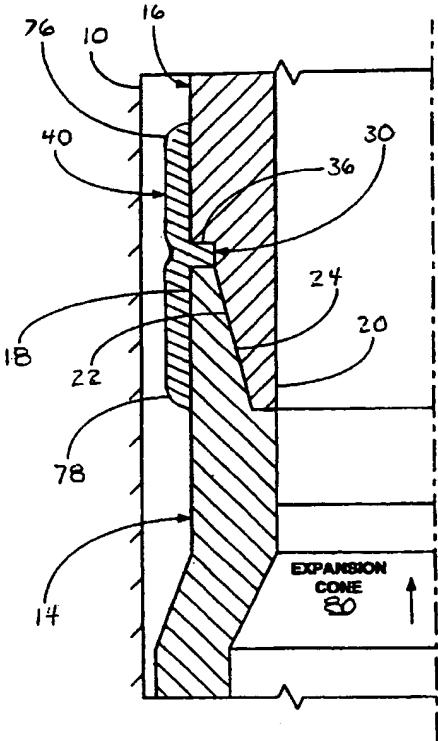
(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CI, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:  
— of inventorship (Rule 4.17(iv)) for US only

[Continued on next page]

(54) Title: MAGNETIC IMPULSE APPLIED SLEEVE METHOD OF FORMING A WELLBORE CASING



(57) Abstract: A method of forming a wellbore casing within a borehole (10) that traverses a subterranean formation includes the steps of assembling a tubular liner by coupling a threaded portion (24) of a first tubular member (16) to a threaded portion (22) of a second tubular member (14) and coupling a tubular sleeve (40) to the threaded portions (22,24) of the first (16) and second (14) tubular members. The method further includes positioning the wellbore casing within the borehole (10). The step of coupling the tubular sleeve (40) through the threaded portions (22,24) of the first (16) and second (14) tubular members includes applying impulsive magnetic energy to the tubular sleeve (40).

WO 2004/018824 A3

BEST AVAILABLE COPY



**Published:**

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**(88) Date of publication of the international search report:**

29 July 2004

**BEST AVAILABLE COPY**

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/25677

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : E21B 23/00; F16L 25/00  
 US CL : 166/207,380; 285/333

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
 U.S. : 166/207,380,206,313,381,242.6; 285/333,53; 403/179,273

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
 Please See Continuation Sheet

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A, P	US 2003/0067166 A1 (SIVLEY, IV) 10 April 2003 (10.04.2003), whole document.	1-4
A	US 5,314,014 A (TUCKER) 24 May 1994 (24.05.1994), whole document.	1-4
A	US 4,614,233 A (MENARD) 30 September 1986 (30.09.1986), whole document.	1-4
A	US 3,520,049 A (LYSENKO et al) 14 July 1970 (14.07.1970), whole document.	1-4

<input type="checkbox"/>	Further documents are listed in the continuation of Box C.	<input type="checkbox"/>	See patent family annex.
*	Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E"	earlier application or patent published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search  12 December 2003 (12.12.2003)	Date of mailing of the international search report  21 MAY 2004
Name and mailing address of the ISA/US  Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized Officer  David J. Bagwell Telephone No. (703) 308-1113

Form PCT/ISA/210 (second sheet) (July 1998)

BEST AVAILABLE COPY

**INTERNATIONAL SEARCH REPORT**

PCT/US03/25677

**Continuation of B. FIELDS SEARCHED Item 3:**  
JPO, EPO, Derwent

Terms: sleeve, tubular, expansion/expand, magnetic, impulse/impulsive